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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|--------------------------|---------------------|------------------|
| 09/966,415 | 09/28/2001 | Bert Leo Alfons Verdonck | NL000522 | 4364 |

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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BRIARCLIFF MANOR, NY 10510

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| EXAMINER |
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MIDKIFF, ANASTASIA

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| ART UNIT | PAPER NUMBER |
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2882

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08/23/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/966,415 | VERDONCK ET AL. | |
| | Examiner | Art Unit | |
| | Anastasia Midkiff | 2882 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 9, 10, 13 and 14 are objected to because of the following informalities:

With respect to Claim 9, Lines 5-6 recite, "the patient", wherein there is insufficient antecedent basis for this limitation in the claim. The examiner suggests replacing "the" with --a--.

With respect to Claim 10, the claim appears to be a duplicate of, or at least not further limiting than, Claim 8.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 1, at Lines 9-10, the phrase, "and/or from other sources of information" renders the claim indefinite because the claim includes elements not actually disclosed (those encompassed by "other sources"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

With respect to Claim 9, at Lines 14-15, the phrase, "and/or from other sources of information" renders the claim indefinite because the claim includes elements not

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actually disclosed (those encompassed by "other sources"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claims 2-8 and 11-13 are rejected based on their dependency upon Claims 1 and 9.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14, as they are best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by International Application Publication to Freundlich, et al. (WO 98/24063).

With respect to Claims 1, 4, 8, 9, and 10, Freundlich et al. teach an x-ray apparatus (20) for imaging a plurality of vertebrae of the human spine (69), and the method for its use, comprising:

- an x-ray source (28) and an x-ray detector (30) facing the x-ray source (Figure 1);
- the x-ray source (28) and the x-ray detector (30) being moveable with respect to each other and with respect to a patient (Page 10, Lines 4-13);

- wherein the x-ray apparatus (20) acquires projection images of each of the vertebrae (68) from different positions and orientations (Page 11, Lines 35-38, and Page 12, Lines 1-6);
- a control unit (46) controlling said apparatus (Page 11, Lines 1-3) and providing at least one initial lateral projection image of at least a spinal region of interest (Page 4, Lines 20-22, and Page 12, Lines 4-6);
- a processing unit (40) determining the position and orientation of the vertebrae (68) in the spinal region of interest (69) from the at least one initial projection image (Page 4, Lines 20-22, Page 10, Lines 27-30, and Page 12, Lines 4-6);
- said processing unit determining optimum slice (66) and trajectory (65) imaging parameters for each of the plurality of vertebrae from their positions and orientations (Page 11, Lines 4-35);
- said control unit (46) using said optimum imaging parameters to control the x-ray apparatus (20), so that images of each of the vertebrae (68) are acquired using said optimum imaging parameters (Page 5, Lines 9-15, Page 11, Lines 4-38, and Page 12, Lines 1-7).

With respect to Claim 2, Freundlich et al. further teach that optimum exposure and collimator settings are determined from the positions, orientations, and appearance of the vertebrae (68) in the at least one initial projection image (Page 6, Lines 9-12).

With respect to Claims 3 and 6, Freundlich et al. further teach that optimum projection lines for acquiring projection images of each of the vertebrae (68) in the

spinal region (69) are determined from the positions and orientations of the vertebrae (Page 12, Lines 23-29).

With respect to Claim 5, Freundlich et al. further teach that the at least one initial projection image is an overview image from at least two projection images (Page 4, Lines 20-22, and Page 12, Lines 4-6).

With respect to Claim 7, Freundlich et al. further teach that the acquired images of the vertebrae (68) are displayed separately or are combined to form a composite image for display (Page 12, Lines 7-10).

With respect to Claim 13, Freundlich et al. further teach that the x-ray source and the x-ray detector are moved along a scanning trajectory (65) for acquiring the images (Page 11, Lines 4-38, and Page 12, Lines 1-7).

With respect to Claims 11, 12, and 14, Freundlich et al. further teach generating a scanning trajectory prior to the step of acquiring images (Page 2, Lines 26-34), and wherein the step of acquiring images of the plurality of vertebrae includes the step of moving at least one device along the scanning trajectory (Page 11, Lines 4-38, and Page 12, Lines 1-7).

Response to Arguments

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Documents to: Rhodes et al. (US 4,920,573), Steiger et al. (US 5,483,960), Mazess (US 5,577,089), Vining et al. (US 6,366,800 B1), and Gerard et al. (US 7,046,830 B2) regarding imaging of curved anatomical structures in x-ray devices; and to Robb et al. (US 5,568,384) regarding combining images of curved anatomical surfaces to create a composite image of an anatomical region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-5053. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASM
8/7/07



Allen C. Ho
ALLEN C. HO
PRIMARY EXAMINER